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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,546	06/25/2003	Wei-Yi Lin	10112271	5452

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EXAMINER	
RIELLEY, ELIZABETH A	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/603,546	LIN ET AL.	
	Examiner	Art Unit	
	Elizabeth A. Rielley	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6-9 and 14-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6-9 and 14-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Amendment filed 9/14/06 has been entered and considered by the Examiner. Claims 3-5 and 10-13 have been canceled. Currently, claims 1, 2, 6-9, and 14-29 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1, 2, 5-9, 14-20, 23, and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Namikawa et al (US 5600203) in view of Ellison et al (US 20020079611).

In regard to claim 1, Namikawa et al ('203) teach a method of repositioning display spacers using inductive attraction, comprising: providing magnetic spacers (113; figure 12; column 10 lines 57-60; column 4 line 61 to column 5 line 10); providing an inductive chuck to attract and lift the spacers (114 on 7; column 10 line 66 to column 11 line 7); providing a substrate (2); aligning the spacers with desired positions on the substrate (figures 12a-12g; column 10 line 43 to column 11 line 35). Namikawa et al ('203) are silent regarding the limitations of a voltage is applied to the inductive chuck, and interrupting the voltage applied to the inductive chuck. In the same field of endeavor of inductive chucks, Ellison et al teach the use of an inductive chuck wherein a voltage is applied and interrupted (paragraph 13) in order to control the clamping force (paragraph 13). Therefore, it would have been obvious at the time of the

invention to one of ordinary skill in the art to incorporate the voltage applied an inductive chuck as taught by Ellison et al with the inductive chuck of Namikawa. Motivation to combine would be to control the clamping force of the chuck.

In regard to claim 2, Namikawa et al ('203) teach the spacers are spacers of a field emission display (claim 5).

In regard to claim 6, Namikawa et al ('203) teach the spacers are made of magnetic materials (113; column 11 lines 3-7).

In regard to claim 7, Namikawa et al ('203) teach the spacers are completely comprised of magnetic materials (113; column 11 lines 3-7).

In regard to claim 8, Namikawa et al ('203) teach the spacers (6) are partially comprised of magnetic materials (due to 113; column 11 lines 3-7).

In regard to claim 9, Namikawa et al ('203) teach the spacers (6) have two or more layers (6 and 113; see figure 12), at least one of which is made of magnetic materials (113; column 11 lines 3-7).

In regard to claim 14, Namikawa et al ('203) teach the spacers are made of metal, alloy, dielectric, ceramic, or glass materials, or a combination thereof (column 11 lines 3-7).

In regard to claim 15, Namikawa et al ('203) teach the spacers are cylindrical, X-, I-, L-, or bar-shaped or a combination thereof (see figure 2).

In regard to claim 16, Namikawa et al ('203) teach the shapes of spacers have two or more cross points, comprising comb, lattice, grid, or zig-zag shapes or a combination thereof (see figure 12b).

In regard to claims 17-20, Namikawa et al ('203) teach the substrate is an anode plate and cathode plate (column 11 lines 43-47) of a field emission flat panel display (column 2 lines 6-9).

In regard to claim 23, Namikawa et al ('203) teach the magnetic force lifts the spacer and brings them into contact with the inductive chuck (column 10 line 66 to column 11 line 7).

In regard to claim 24, Namikawa et al ('203) teach the spacers are released from the inductive chuck (7) by interrupting the magnetic force (column 11 lines 14-21).

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Namikawa et al (US 5600203) in view of Ellison et al (US 20020079611) and in further view of Yakou et al (US 5855637).

Namikawa/Ellison disclose all the limitations set forth, as described above, except an alignment step to position the substrate, wherein the alignment step comprises use of Charge-Coupled Device (CCD) and alignment marks. Yakou et al ('637) teaches the use of Charge-Coupled Device (CCD) (36A and B; figure 1; column 8 lines 35-45) and alignment marks (2b and 2c; figure 9; column 11 lines 49-57) in an alignment step of manufacturing a display in order to form a stronger bond between the spacer and substrate (column 4 line 66 to column 5 line 4). It would have been obvious at the time of the invention to

one of ordinary skill in the art to modify the method of positioning spacers of Namikawa/Ellison with the alignment step of Yakou et al ('637). Motivation for combining would be to form a stronger bond between the spacer and substrate.

Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Namikawa et al (US 5600203) in view of Guenther et al (US 6949880).

In regard to claim 25, Namikawa et al ('203) teach a method of repositioning display spacers using inductive attraction, comprising: providing spacers (113; figure 12; column 10 lines 57-60; column 4 line 61 to column 5 line 10); providing an inductive chuck to attract the spacers (114 on 7; column 10 line 66 to column 11 line 7); providing a substrate (2); using the inductive chuck to position the spacers in desired positions on the substrate (figures 12a-12g; column 10 line 43 to column 11 line 35).

Namikawa et al ('203) are silent regarding the limitations of a voltage is applied to the inductive chuck, and interrupting the voltage applied to the inductive chuck. In the same field of endeavor of inductive chucks, Ellison et al teach the use of an inductive chuck wherein a voltage is applied and interrupted (paragraph 13) in order to control the clamping force (paragraph 13). Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art to incorporate the voltage applied an inductive chuck as taught by Ellison et al with the inductive chuck of Namikawa. Motivation to combine would be to control the clamping force of the chuck.

Namikawa et al ('203) are also silent regarding the limitation of the use of electrostatic force as a clamping force. Guenther et al ('880) teach the use of electrostatic force to hold spacers (column 4 lines 11-25) in order to adhere to prevent particle (spacer) agglomeration on the substrate (column 4 lines 17-20). Hence it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the method of manufacturing the FED of Namikawa et al ('203) with using electrostatic force for

the spacers and inductive chuck. Motivation to combine would be to prevent particle (spacer) agglomeration on the substrate.

In regard to claim 26, Namikawa/Guenther teach all the limitations set forth, as described above. Namikawa also teaches that an inductive force lifts the spacer and brings them into contact with the inductive chuck (column 10 line 66 to column 11 line 7). Guenther teaches the inductive force to be the electrostatic force (column 4 lines 11-25) in order to adhere to prevent particle (spacer) agglomeration on the substrate (column 4 lines 17-20). Hence it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the method of manufacturing the FED of Namikawa et al ('203) with using electrostatic force for the spacers and inductive chuck. Motivation to combine would be to prevent particle (spacer) agglomeration on the substrate.

In regard to claim 27, Namikawa/Guenther teach all the limitations set forth, as described above. Namikawa also teaches that the spacers are released from the inductive chuck (7) by interrupting the inductive force (column 11 lines 14-21). Guenther teaches the inductive force to be the electrostatic force (column 4 lines 11-25) in order to adhere to prevent particle (spacer) agglomeration on the substrate (column 4 lines 17-20). Hence it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the method of manufacturing the FED of Namikawa et al ('203) with using electrostatic force for the spacers and inductive chuck. Motivation to combine would be to prevent particle (spacer) agglomeration on the substrate.

In regard to claim 28, Namikawa/Guenther teach all the limitations set forth, as described above. Namikawa also teaches that spacers (6) have two or more layers (6 and 113; see figure 12), at least one of which is made of materials that are inductive (113; column 11 lines 3-7). Guenther teaches the inductive

force to be the electrostatic force (column 4 lines 11-25) in order to adhere to prevent particle (spacer) agglomeration on the substrate (column 4 lines 17-20). Hence it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the method of manufacturing the FED of Namikawa et al ('203) with using electrostatic force for the spacers and inductive chuck. Motivation to combine would be to prevent particle (spacer) agglomeration on the substrate.

In regard to claim 28, Namikawa et al ('203) teaches the spacers (6) are made of metal, alloy, dielectric, ceramic, or glass materials, or a combination thereof (column 11 lines 3-7).

Response to Arguments

Applicant's arguments filed 9/14/06 have been fully considered but they are not persuasive.

In regard to Applicant's argument that the prior art of record fails to teach the use of providing an inductive chuck to attract spacers by electrostatic force, the Examiner respectfully disagrees. Namikawa et al teaches the use of an inductive chuck used to attract and move spacers. Guenther teaches the use of electrostatic to attract and repel spacers. Accordingly, one skilled in the art at the time of the invention would reasonable contemplate the incorporation of electrostatic force with the inductive chuck of Namikawa in order to prevent spacer agglomeration on the substrate as taught by Guenther.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth Rielley

Examiner
Art Unit 2879

MARICELI SANTIAGO
PRIMARY EXAMINER